K.C. 99'er CONNECTION

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Playing With the Line Number Table
by Ken Woodcock

(Reprinted from Tidewater TI-99 User's Group Newsletter)

Actually we're not going to be manipulating the LNT, just using it to play some tricks with Extended Basic programs. In my past articles, ANALYZING A BASIC PROGRAM, I explained how the LNT is used when listing a program. Now let's see how we can make a program "UNLISTABLE"! The trick is to modify the first byte of the line data. The first byte indicates how long the line is. All we have to do to make it unlistable is to change that byte to zero.

Here is a short XB program that will do it. The first step is to type in the program and save it in MERGE format (SAVE DSK1.FIX,MERGE). Now load any Basic/XB program, RESequence it if necessary so that no lines are lower than 10, then merge in FIX (MERGE DSK1.FIX), and run it. The program shows each line number as it sets it's length byte to zero. When it finishes, try to list it! Yeh, just try!! A pretty screen isn't it? If you don't have a color monitor you won't appreciate it as much. Anyway, your computer will lock up and will have to be reset. This does not prevent the program from being copied or resaved but does inhibit modifications. Some commercial software companies and even some "freeware authors" have used this technique to "PROTECT" their software.

FIXing a program to be unlistable by using the above method was the easy part. The length byte simply is set to zero regardless of what it was; reversing this procedure is a bit more tricky. I have "UNFIXED" some programs manually by getting a sector printout with DISKFIXER or DISK UTILITIES, then scanning the list for 2 consecutive zero bytes (00 00). While this worked, it was both tedious and prone to error; two conditions that are just begging for a computer solution. So I set out to write a program to do the work. My first attempt was to put >FF in all the lenth bytes. This was simple to do and did allow the program to be listed but had some undesirable side effects when editing lines.

The length byte had to be accurately determined. Since the end of each line is marked with a zero, I tried to count the bytes from the start of the line to a zero but a zero byte can appear within a line when a line number is referenced in a GOTO, GOSUB, etc.. In the UNFIX program the method used is to count bytes until a zero is found. Then the LNT is checked to see if this is a true end of line by comparing its address to the start of another line and to the end of the program. This process is somewhat slow but much faster and more accurate than doing it manually. It is used in the same manner as the FIX program: first load the unlistable program, RESequence it, MERGE DSK1.UNFIX, RUN. Now you can delete lines 1-6 and save your recovered program.

(save as FIX in MERGE form)

```
1 CALL INIT :: CALL PEEK(-31952,A,B,C,D):: SL=C*256+D-65539 :: EL=A*256+
B-65536 :: FOR I=SL TO EL STEP -4 :: CALL PEEK(I,E,F,G,H):: ADD=G*256+H-
65536 :: PRINT "LINE # ";E*256+F
2 CALL LOAD(ADD-1,0):: NEXT I :: STOP :: !@P-
```

(Playing with the line number table - continued)
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(save as UNFIX in MERGE form)

```
1 CALL INIT :: CALL PEEK(-31952,A,B,C,D):: SL=C*256+D-65539 :: EL=A*256+
B-65536 :: FOR X=SL TO EL STEP -4 :: CALL PEEK(X,E,F,G,H):: ADD=G*256+H-
65536 :: PRINT "LINE # ";E*256+F
2 I=1 :: CALL PEEK(ADD-1,V):: IF V THEN 6
3 CALL PEEK(ADD+I,V,W):: IF V THEN I=I+1 :: GOTO 3
4 FOR Y=SL TO EL STEP -4 :: CALL PEEK(Y,E,E,E,F):: IF E*256+F-65536=ADD+
I+2 OR W=0 OR ADD+I>-3 THEN CALL LOAD(ADD-1,I+1):: GOTO 6
5 NEXT Y :: I=I+1 :: GOTO 3
6 NEXT X :: STOP :: !@P~
```

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(Who I am - continued)
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I have had no formal training in computer programming. I started to learn BASIC on the Monolithic computer at work and later bought my first TI when they started to offer the $100 rebate (I think that was in late 82 or early 83). My primary reason for going to TI was their reputation and quality. I later found out that several technical people in my company had bought VIC-20's and were designing interfaces & periferals. I feel fortunate that I was unaware of this at the time I bought my TI since I might have been persuaded to join them and would have missed all of this.

A few months after buying my TI I received a flyer in the mail which was my first introduction to the user group. I well remember my joy and anticipation as the meeting time approached. I had so many questions - I wanted to know everything about this wonderous machine. The first meeting I attended was packed to overflowing. It was gratifying to know that so many others were as eager to learn. Today we are much more technically advanced than we were then but I doubt if we'll ever again have the feelings of that era.

My present system consists of a GENEVE 9640, TI RS232 card, Corcomp floppy disk controller, Myarc HFDC card, Seagate ST-251 40 mb hard disk, 2 5 1/4" and 1-3 1/2" floppy disk drives, a Star Gemini-10X printer with Microstuffer 64K buffer and a Magnavox R6B monitor 40 which has inputs for analog RGB (for the GENEVE), TTL RGB (for my Toshiba laptop which I sometimes use when I bring work home), and composite (for my VCR). My favorite type of software is utility programs, especially those that promise to help me get better organized!! GOOD LUCK!! I program in Extended Basic and Assembly. I find it more productive to customize an existing program for my particular need than to write one from scratch. For that reason I am strongly opposed to "copy protection". I like the "FAIRWARE" system. I think that I have sent contributions for all the programs that I regularly use. All the programs that I have written are in Public Domain as I don't feel they are worth paying for (of course the same can be said for many "commercial" programs that I have seen).

There is no doubt that the user base of the TI computer is shrinking and will inevitably reach the point where it will not support a large number of user groups or software/hardware dealers. I beleive the GENEVE and HFDCC by Myarc will slow down the demise but are not likely to attract new users. Does that matter? Well, to those who would make their livelyhood in the computer world it certainly would, but to those hobbyists like me, it doesn't.

Tremendously Interesting Congregation Of Frenzied Fanatics

by Barry Ensley

(Reprinted from Tidewater TI-99 User's Group Newsletter)

This gathering is better known as The TI Computer Owners' Fun Fair --T.I.C.O.F.F., or simply TICOFF. Now it is also known as The IBM/Compatible Users' Fun Fair, as well, (IBMCUFF?) Regardless of what one wants to call it, it is still one of the largest fairs for our TI and Geneve computers. (I'm sure it isn't one of the larger IBM and compatible fairs.)

Our Prez, Mike Couture, VP, Ken Woodcock, and yours truly made the l_o_n_g trip to Rosell Park, NJ--not all that far from The Big Apple--to become one those Feverish Fanatics for a day. In fact, we were such FFs that nearly half the 36 hours we were gone was spent on the road. Not that that was all bad. The opportunity to talk computers for many hours comes rarely, particularly with such knowledgeable companions.

OK. I know what you really want to hear. So here is my report on the actual fair. (Bear in mind, I got elected to write this after the fact, so I wasn't taking notes for this article during the happening.)

The fair took place in a local high school, and was sponsored by the school's Student Council along with a half dozen computer clubs. I would give them an A- for their efforts. The reasons for the - will be brought up later.

I have read the reports of others who had attended fairs, and now I understand why they frequently had trouble remembering who all was there. I am certain I will be guilty of this as well.

Where to start? I guess the best place is with the first vendor table encountered upon entering the gym where all the dealers were located. This was RAVE 99, the one company I had just told Mike and Ken I hoped wasn't there. I had been considering a RAVE keyboard ever since I began typing on MS-DOS machines, but I didn't want to spend the bucks for this enhancement. Needless to say, I am now typing on a PC keyboard as I write this using the RAVE 99 keyboard interface. I couldn't keep my checkbook in my pocket once I actually saw just how nice their interface worked with a "real" keyboard. (I plan a review of the interface in a future newsletter; the mod isn't complete yet.) They also made a sale to Ken of their speech synthesizer adapter card. Imagine they were pleased we attended.

Another vendor where I spent a good deal of time was Genial Computerware, being manned by non-other than J. Peter Hoddie. It's not often one has the opportunity to speak with someone of Peter's brilliance. I believe I bugged him a bit, however that's the price a person has to pay for celebrity status. My time spent with him was enlightening, indeed. (If Peter is correct, don't ever expect a decent BASIC compiler for the 99. Unfortunately, I have to agree.) Another piece of information I was able to get out of him was the details on his upcoming "killer program." This took a lot of bugging. I think he told me so I would leave him alone. The rest of you will just have to wait for the official release, unless it has been announced between the time I wrote this and you read it. Sorry.

Both MICROpendium and Computer Shopper were represented, at least in spirit. They each had a table with students selling the latest issues of their respective magazines. I did get a copy of Computer Shopper for a buck, which wasn't a bad deal.

An interesting area was the Swap Shop. One could bring used hardware and software to sell. I ventured by this place many times checking out the goodies. The most unusual items I saw were the Morning Star CP/M and 80 Column cards, being sold as a package. I knew these beasts existed, but this was the first time I had ever seen them. I imagine some collector bought them; they went for a tidy sum.

A table was being manned by two gentlemen for a company I had never heard of before: cWare Software. As the name suggests, they were dealing in little c. (Small c... Tiny c... Or whatever the correct term is. I can never remember. How about just c?) Anyway, one of them was demoing a menu/shell type of program written in c. Though I had no real interest in this program, it certainly looked to be efficient. The other young man was showing a pre-release version of a program for c programmers he was developing. I didn't understand all he was saying about it, however his enthusiasm over the product was catching. If you are interested in c, then remember the name cWare Software. There may be big things coming from them for this most popular and powerful language.

Yes, Myarc was there, represented by the head man himself, Lou Phillips, and by Jerry Coffey, I believe, who is a TI SYSOP on Delphi, I believe. I didn't have much of a chance to talk to Lou since there was always a crowd around their tables. Figure they were doing excellent business or answering plenty of questions. Probably both. I did have a chance to talk to Jerry when Lou was off giving a talk. From that conversation, and from talking to Ken later, I think it is safe to assume the Geneve and HFDC are their main items of concern at the present.

To close my comments on strictly TI related dealers, I turn to DOS (Disk Only Software) where I spent a good deal of time shooting the breeze with Jim Horn of DOS, and TI SYSOP of Compuserve, Al Beard (more on Al in a bit), and fellow unknown TIers. Rumors were talked about. Software was discussed. The TI world in general was examined. And a Myarc HFDC with an excellent price tag attached kept staring me in the face, but I knew better this time. Didn't want a check to bounce no matter how tempting the card was!

Sorry to report that only one piece of software, or hardware, made its true debut at TICOFF. That was Al Beard's, of LMGA Products, release of 9640 FORTRAN. (Maybe the admittedly buggy release of the Geneve's BASIC also falls into this category. Not being a Genever, I don't keep up that well.) Fortunately, to me, this was an important piece of software since I am interested in FORTRAN. Though it was for the Geneve, Al said he hoped to soon release version 4 of 99 FORTRAN, now at version 3, which would include many of the new implements found in 9640 FORTRAN. Oh, this reminds me. Quality 99 Software was also present and besides their usual fare, they were selling the 9640 FORTRAN.

Besides the TI vendors, there were many selling a variety of general interest items such as bulk disk, used drives... Heck, you name it and it could probably be found. There was also quite a few tables devoted to IBM items. I did pick up a couple of disks of MS-DOS related software and even found a genuine treasure of a deal on a piece of PC software in the Swap Shop.

This wouldn't be complete if I didn't mention that I had a wonderful, if way too brief, chat with Barry Traver. I have respected him for a long time, hearing nothing but great things about this generous man. Nothing that day changed this. I have talked with him on the phone and exchanged thoughts via the U.S. Mail, but talking in person just can't be beat. However, I must tell it like it is. Though he has so many attributes, being an organized person will never be one of them no matter how many books he reads on the subject. I can tell it's not in his nature. That's OK, Barry. Ain't none of us perfect.

Back in the beginning of this article, I gave TICOFF an A-. There was suppose to be a social mixer the night before at the motel where we stayed. We made semi-asses of ourselves wandering around the motel looking for this get together. It turns out it was canceled, but no one informed the motel. I wish it had taken place as I was looking forward to rubbing shoulders with all the bigwigs. But even if it had to be canceled, we could have been saved some funny looks if the motel had simply been told. Take a couple of points off.

Next, there were maybe five talks scheduled for the fair. Of these, only two were actually TI oriented. (I guess a third on user groups was aimed at TIers more so than IBMers, but I for one have read, studied, and delved on this topic so much that I don't want to hear anymore. I can't believe it isn't the same old things just rehashed. End of editorial.) The two talks which I know were aimed at us were an introduction/tutorial by Al Beard on 9640 FORTRAN, and Lou Phillips on the Geneve's BASIC. I think that was the aim of his talk, anyway.

My complaints are several. First, the times and places weren't posted until late. So late, that I missed the first part of Al's talk, which was geared too much towards the Genevers for this dedicated 99er. Lou's talk might have been of interest to me, if I had known it was going to stray from the main topic as I heard it did. I wasn't interested in the BASIC, but I gathered it got off into other fields such as the HFDC which I would have enjoyed hearing. The second complaint is that the talks were geared mainly towards the Genevers, and the TI world is still largely composed of 99ers. Lastly, two, or three, talks seems a bit slim. With the caliber of folks present, I would have thought more could have been scheduled. Subtract several more points and there's the A-.

All in all, it was a feast for us Frenzied Fanatics known as TIers, and I highly recommend attending TICOFF next year. The cost scared me, but with three of us sharing the expenses, it wasn't bad. The fair certainly hurt my wallet, but the trip itself was very reasonable. Finally, I would like to thank the Student Government of Roselle Park High School, all the user groups who participated (in particular the individuals who went beyond the call of duty from these groups) and, of course, the vendors. Let's hope they are able to make TICOFF '99 ever better. Would love to be able to give an A+ next time.